

**ASSEMBLY AND SCREENING OF HIGHLY COMPLEX
AND FULLY HUMAN ANTIBODY REPERTOIRE IN YEAST**

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ABSTRACT

10 Compositions, methods, and kits are provided for efficiently generating
and screening a library of highly diverse protein complexes for their ability to
bind to other proteins or oligonucleotide sequences. In one aspect of the
invention, a library of expression vectors is provided for expressing the library
of protein complexes. The library comprises a first nucleotide sequence
15 encoding a first polypeptide subunit; and a second nucleotide sequence
encoding a second polypeptide subunit. The first and second nucleotide
sequences each independently varies within the library of expression vectors.
In addition, the first and second polypeptide subunit are expressed as
separate proteins which self-assemble to form a protein complex, such as a
double-chain antibody fragment (dcFv or Fab) and a fully assembled antibody,
20 in cells into which the library of expression vectors are introduced. The library
of expression vectors can be efficiently generated in yeast cells through
homologous recombination; and the encoded proteins complexes with high
binding affinity to their target molecule can be selected by high throughput
screening in vivo or in vitro.

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